

**INTERLACED ALTERNATING PIXEL DESIGN FOR HIGH  
SENSITIVITY CMOS IMAGE SENSORS**

**ABSTRACT**

5 A structure of an image sensor for sensing the light of an image  
impinging thereupon and for translating the image into a standard television  
format is disclosed. The structure comprises a plurality of first and second  
light detecting elements (22, 23) arranged in rows and columns and half as  
many rows and columns as scan lines of a television format for generating  
10 respective analog signals in proportion to the intensity of the light  
impinging respectively on each of the first and second light detecting  
elements (22, 23), wherein the first and second light detecting elements in  
each row are alternately disposed and activated by first read lines  $RDO_n$  ( $n$   
= 1...256) to generate odd field signals, and wherein the first and second  
15 light detecting elements (22, 23) of two adjacent rows disposed in a zigzag  
or serrated manner are activated by second read lines  $RDE_n$  ( $n$  = 1...256) to  
generate even field signals.

(Fig. 2A)